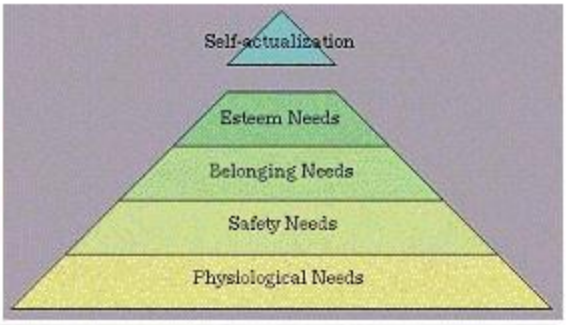

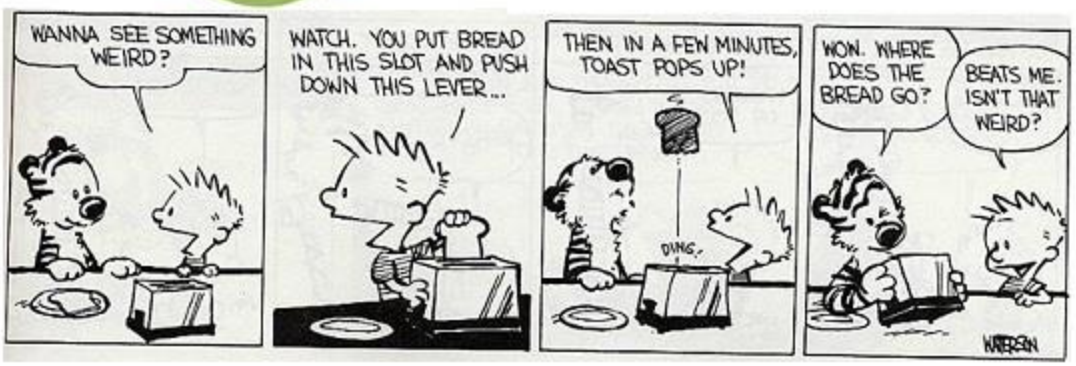

Stage Theory of Cognitive Development:

The Stage Theory of Cognitive Development as proposed by Jean Piaget states that children go through four stages of cognitive development. The last two stages, Concrete Operations (age seven to 11) and Formal Operations (age 11 to 15), are relevant to me because they explain how students I will be teaching think and what they are capable of doing. It is important to know how to explain concepts to them, or perhaps how not to explain them. During Concrete Operations students begin to think logically, abstractly, and can conceptualize ideas. Not everyone will progress through these stages at the same rate though so some grade seven students for example might still not understand abstract explanations. Even in grade nine and 10 concrete examples may be more effective than abstract examples for some. It is important to understand this possibility especially with certain IEP students. By high school most

students will be in the Formal Operations stage which is similar to “adult” thinking and allows for deductive reasoning, but teachers need to look out for students who are not ready for convoluted “adult” answers which may still be difficult for them to process.

Social Development Theory:

The Social Development Theory came from Lev Vygotsky and states that social relationships are extremely important for human cognitive development. We learn about our world and the natural/social rules that govern it through shared experiences with other people. Each student has a Zone of Proximal Development which is an area just beyond their capabilities which they can reach by pushing themselves a little bit past their comfort zone. The More Knowledgeable Other is a person with a better understanding or ability level than the student who can help the student by leading them along with cues and hints which stimulate understanding. If a teacher knows a student’s current understanding of a topic and their cognitive ability, they can provide students with just enough new information so that understanding can be built up naturally through experience or thought. Instead of simply giving an answer, “just enough” information can be given instead for the answer to become apparent with the student still needing to find or see the answer on their own. This social relationship also allows the teacher to better understand each student which allows for future modifications to lessons so as to best reach the target audience.

Problem-Based Learning:

Problem-Based Learning advocates instruction through open-ended and real-world problems which require investigation and collective agreement on an answer if working in groups. It is believed that this type of learning stimulates critical thinking and creative skills, improves problem-solving skills, and allows students to transfer knowledge to new situations. There may also be more motivation to work on relevant real-world problems as opposed to simple calculation problems. In math this would allow a teacher to propose word problems based on content being covered, for example finding the distance up a cliff or across a lake using trigonometric ratios. Students could be given a short story to read about adventuring with several trigonometric problems throughout and they would need to decide which obstacles a human could reasonably overcome by uncovering data about the area using math concepts. By withholding step-by-step instructions students could collaborate and share ideas on how best to tackle problems. Investigation and critical thought would be required and while individual values of answers would be identical between groups, how the overall situation in the story was dealt with would be decided upon differently by each group. This sort of engagement in applications of math concepts might be more time consuming than straight lecturing but students will most likely remember the activity better.

Maslow's Hierarchy of Needs:

Abraham Maslow designed a Hierarchy of Needs which explains human motivation for specific goal attainment. In order of priority humans try to satisfy physiological needs, safety needs, belongingness, esteem, and finally self-actualization. While teachers focus on allowing self-actualization to happen in their students there are four other levels in Maslow's hierarchy which must be satisfied first. If a student is hungry or feels in danger, their desire and ability to process and retain new knowledge will be compromised. If a student lacks a feeling of belongingness or esteem they might not benefit as much from group activities or might feel discouraged from contributing in class. To create an optimal learning environment, teachers should also consider if the more basic needs have been met for their students.